

# READ COMPLETE SAFETY INSTRUCTIONS AND INSTALLATION TEMPLATE BEFORE STARTING

## ATTENTION INSTALLER:

This product must be installed by a qualified heating and air conditioning contractor. Failure to do so could result in serious injury from electrical shock. This product must be installed in compliance with all local, state and federal codes.

# Aprilaire® LARGE FAN POWERED HUMIDIFIER MODEL 700M AND 700A

### WARNING

#### 1. ELECTRICAL SHOCK HAZARD.

Disconnect electrical power to the furnace before starting installation. Failure to do so could result in serious injury from electrical shock.

#### 2. SHARP EDGES HAZARD.

Sharp edges may cause serious injury from cuts. Use care when making plenum openings and handling ductwork.

#### 3. RISK OF SCALDING.

Water temperature over 125°F can cause severe burns and scald instantly. Shut off the hot water supply before disconnecting or tapping into any hot water supply line.

### CAUTION

#### RISK OF PROPERTY AND EQUIPMENT DAMAGE.

- Do not install humidifier where freezing temperatures could occur. The water line could freeze and crack causing water damage to the home.
- Do not install humidifier on the furnace jacket.
- Do not install humidifier on a plenum face where the blanked off ends of the cooling coil will restrict air movement through the humidifier.
- Do not set humidity level above recommended or to recommended level if condensation exists on inside windows of any unheated space, as condensation damage may result. Excess humidity can cause moisture accumulation which can allow the possibility for mold growth in the home.

- Do not connect the Model 700M or 700A power cord to multi-speed furnace blower motors or blower motors other than 120 VAC. Premature component failure may result. Use Research Products Corporation Model 50 Current Sensing Relay.
- When installing Aprilaire Humidifier Control on a downflow furnace, ensure blower continues to run after a heat call is satisfied to eliminate high temperatures from damaging the Control.
- Do not install humidifier where water pressure exceeds 125 psi, since damage to the humidifier may result. Follow codes in effect concerning pressure reduction.
- Do not install humidifier on the supply plenum where static pressure exceeds 0.4 in. wg.

### SPECIFICATIONS

#### HUMIDIFIER DIMENSIONS

Width 15<sup>29</sup>/<sub>32</sub>"  
Height (including solenoid valve and drain spud) 18"  
Depth 10<sup>11</sup>/<sub>32</sub>"

#### PLENUM OPENING

14<sup>3</sup>/<sub>4</sub>"W x 14<sup>5</sup>/<sub>16</sub>"H

#### WATER FEED RATE

6 gph

#### ELECTRICAL DATA

120 VAC-60 Hz, 0.8 AMP

## RECOMMENDED WIRING DIAGRAMS

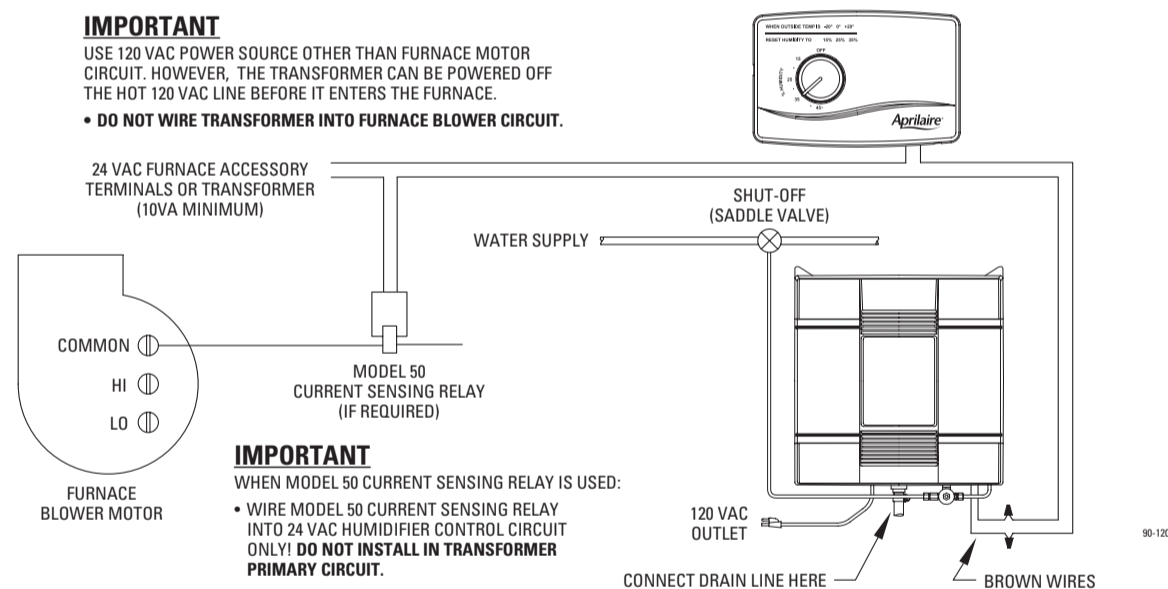
(SEE STEP 6 ON BACK AND "HUMIDIFIER CONTROL SAFETY AND INSTALLATION INSTRUCTIONS" FOR DETAILED WIRING INSTRUCTIONS)

### Model 700M MANUAL CONTROL

#### IMPORTANT

USE 120 VAC POWER SOURCE OTHER THAN FURNACE MOTOR CIRCUIT. HOWEVER, THE TRANSFORMER CAN BE POWERED OFF THE HOT 120 VAC LINE BEFORE IT ENTERS THE FURNACE.

- DO NOT WIRE TRANSFORMER INTO FURNACE BLOWER CIRCUIT.

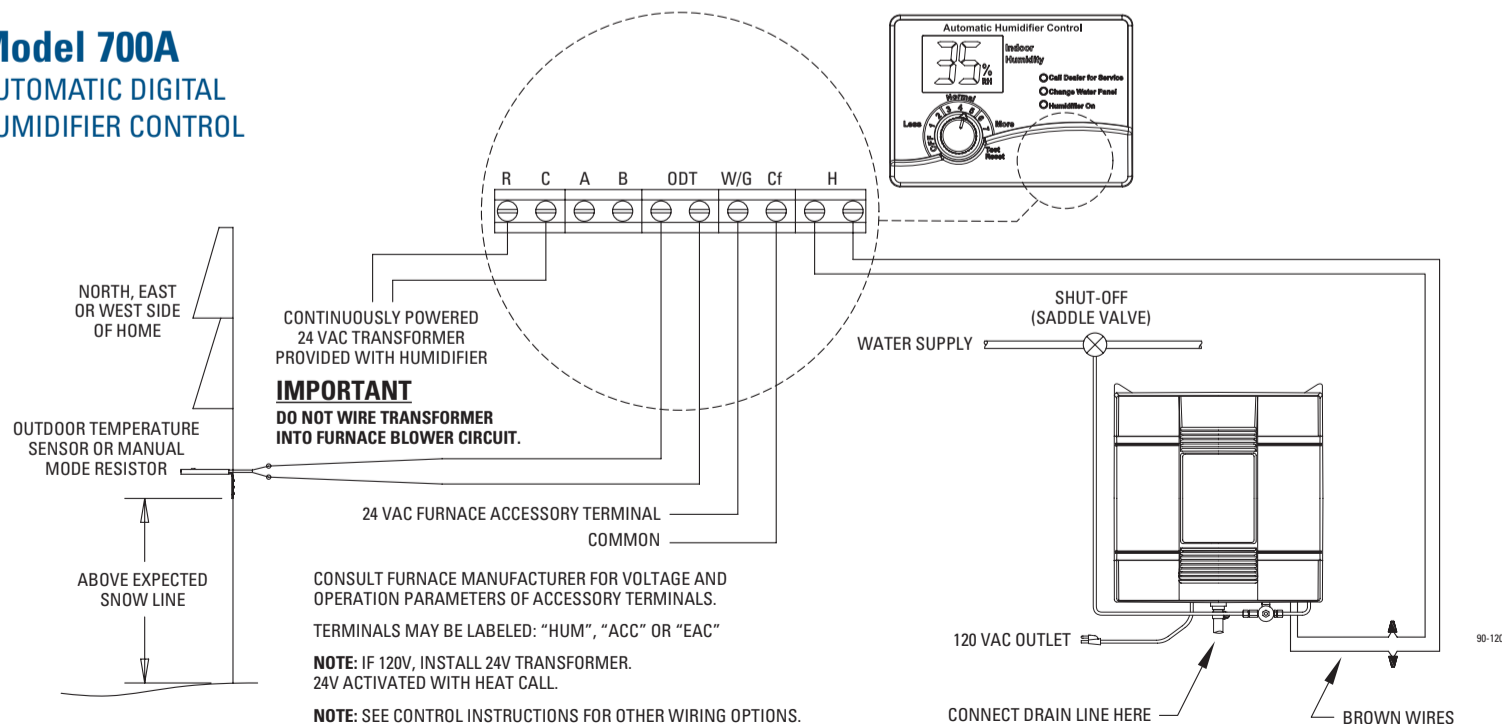


#### IMPORTANT

WHEN MODEL 50 CURRENT SENSING RELAY IS USED:

- WIRE MODEL 50 CURRENT SENSING RELAY INTO 24 VAC HUMIDIFIER CONTROL CIRCUIT ONLY! DO NOT INSTALL IN TRANSFORMER PRIMARY CIRCUIT.

### Model 700A AUTOMATIC DIGITAL HUMIDIFIER CONTROL



#### IMPORTANT

DO NOT WIRE TRANSFORMER INTO FURNACE BLOWER CIRCUIT.

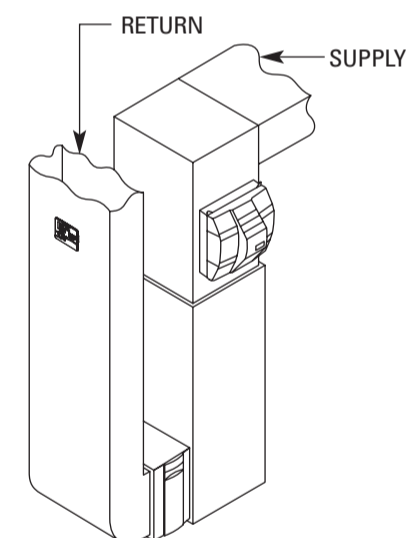
CONSULT FURNACE MANUFACTURER FOR VOLTAGE AND OPERATION PARAMETERS OF ACCESSORY TERMINALS. TERMINALS MAY BE LABELED: "HUM", "ACC" OR "EAC"

NOTE: IF 120V, INSTALL 24V TRANSFORMER. 24V ACTIVATED WITH HEAT CALL.

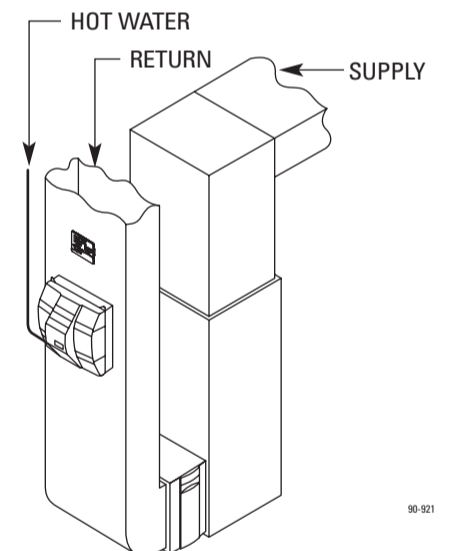
NOTE: SEE CONTROL INSTRUCTIONS FOR OTHER WIRING OPTIONS.

## INSTALLATION OPTIONS

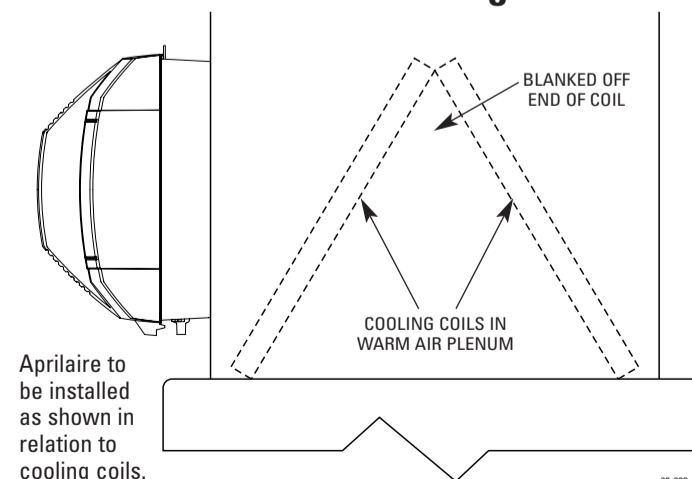
### Typical Installation



### Alternate Installation



### Orientation of Aprilaire Model 700M and 700A to Cooling Coils



Aprilaire to be installed as shown in relation to cooling coils.

### NOTES

- Models 700M and 700A are not suitable for installation on ducts with horizontal airflow. Performance will be reduced.
- When installing Aprilaire humidifier on a heat pump system, use hot water. The heated water supplements the reduced supply air temperature as added heat for evaporation.

**READ REVERSE SIDE FIRST!**

**- TOP -**

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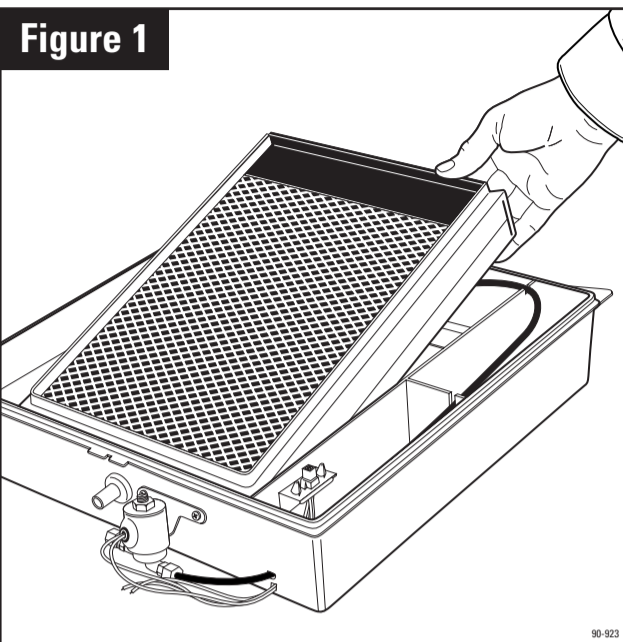
**READ COMPLETE SAFETY INSTRUCTIONS AND INSTALLATION TEMPLATE BEFORE STARTING**

**FURNISHED ITEMS**

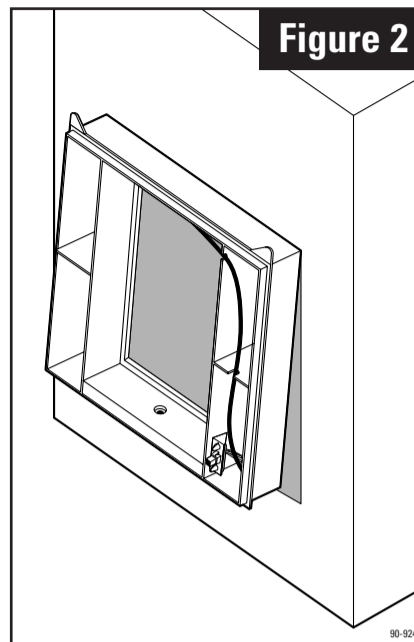
- 24 VAC Transformer
- Manual Humidifier Control (Model 700M only)
- Automatic Digital Humidifier Control (Model 700A only)
- Humidifier Control Installation Instructions
- Saddle Valve
- Humidifier Installation Template

**ITEMS NOT FURNISHED**

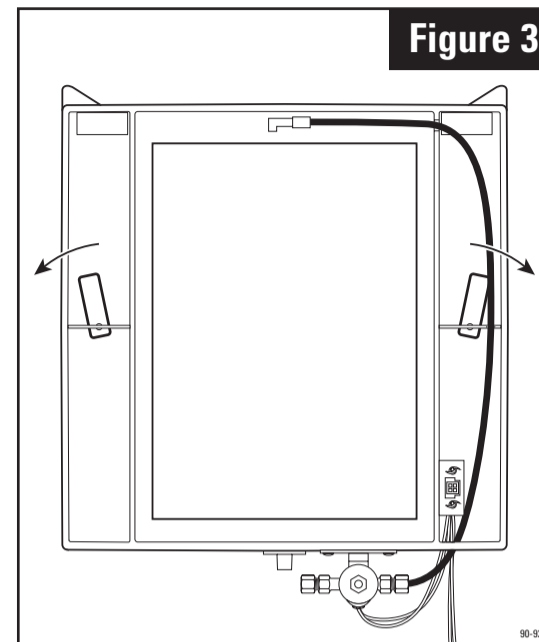
- Mounting screws (sheet metal screws)
- Water supply line (1/4" copper)
- Drain line (1/2" I.D. hose)
- Low voltage wire
- Model 50 Current Sensing Relay (if required)



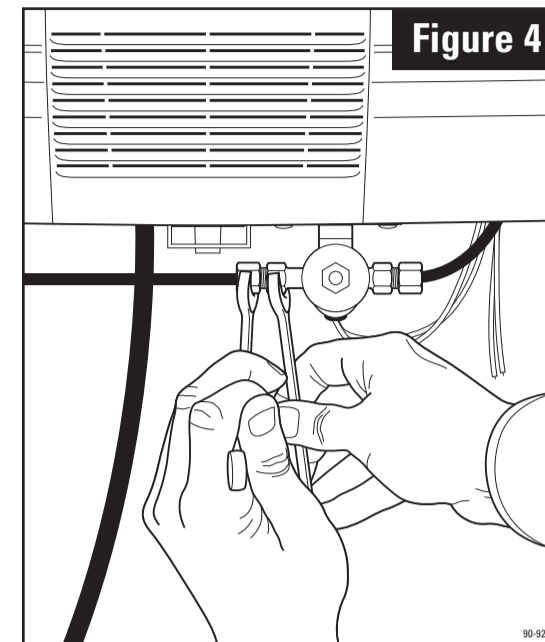
**Figure 1**



**Figure 2**



**Figure 3**



**Figure 4**

**1.** Detach the cover assembly by lifting the latch at the bottom. Remove the Water Panel® evaporator assembly by grasping at top and tipping out. See **Figure 1**.

**2.** Position template on supply plenum. Make sure template is level. Allow clearance for drain line and for servicing. See "Installation Options" on opposite side for position relative to cooling coil.

Trace template outline. Cut 14-3/4" wide x 14-5/16" high opening. **Avoid injury from sharp edges.**

**3.** Position base (2) in duct opening top-first so hooks engage sheet metal at top. See **Figure 2**. Insert bottom of base and slide down to engage hooks at bottom.

**4.** Rotate swing locks to secure base to duct. See **Figure 3**. Fasten base to duct using 4 sheet metal screws in holes provided.

**5.** Insert Water Panel Evaporator assembly into base. Make sure bottom of scale control insert (5) is over drain opening. Snap top of evaporator assembly into base.

**6.** Control installation and wiring. **Disconnect electrical power to furnace before wiring control.** In order for humidifier to operate, furnace must be on and RH must be below set-point of control. Wiring diagrams illustrate recommended method of detecting furnace operation.

**MANUAL HUMIDIFIER CONTROL, MODEL 700M:**

Manual Control can be mounted in return duct or on wall in living space. Knob and cover must be removed to mount control. See wiring diagram for 24V control connections.

- For return duct mounting, position template in convenient location on duct. **Avoid injury from sharp edges when cutting opening.** Make sure foam gasket is in place and secure control to duct using 2 screws in holes provided.
- For wall-mount, select location that will not be affected by drafts or heat sources. Remove and discard foam gasket and secure control over wire access opening using screws & anchors provided.

**AUTOMATIC DIGITAL HUMIDIFIER CONTROL, MODEL 700A:**

- Select location for control on return duct. Position template on duct and mark location of RH sensor opening. Drill 3/4" hole for sensor. Knob and cover must be removed to mount control. Place control on duct with RH sensor extending into duct opening. Make sure gasket is in place around sensor cage. Secure humidistat to duct using 2 screws in openings provided.
- Control must be powered by a continuous 24 V source. See wiring diagrams on template and control instructions for 24 V control connections.

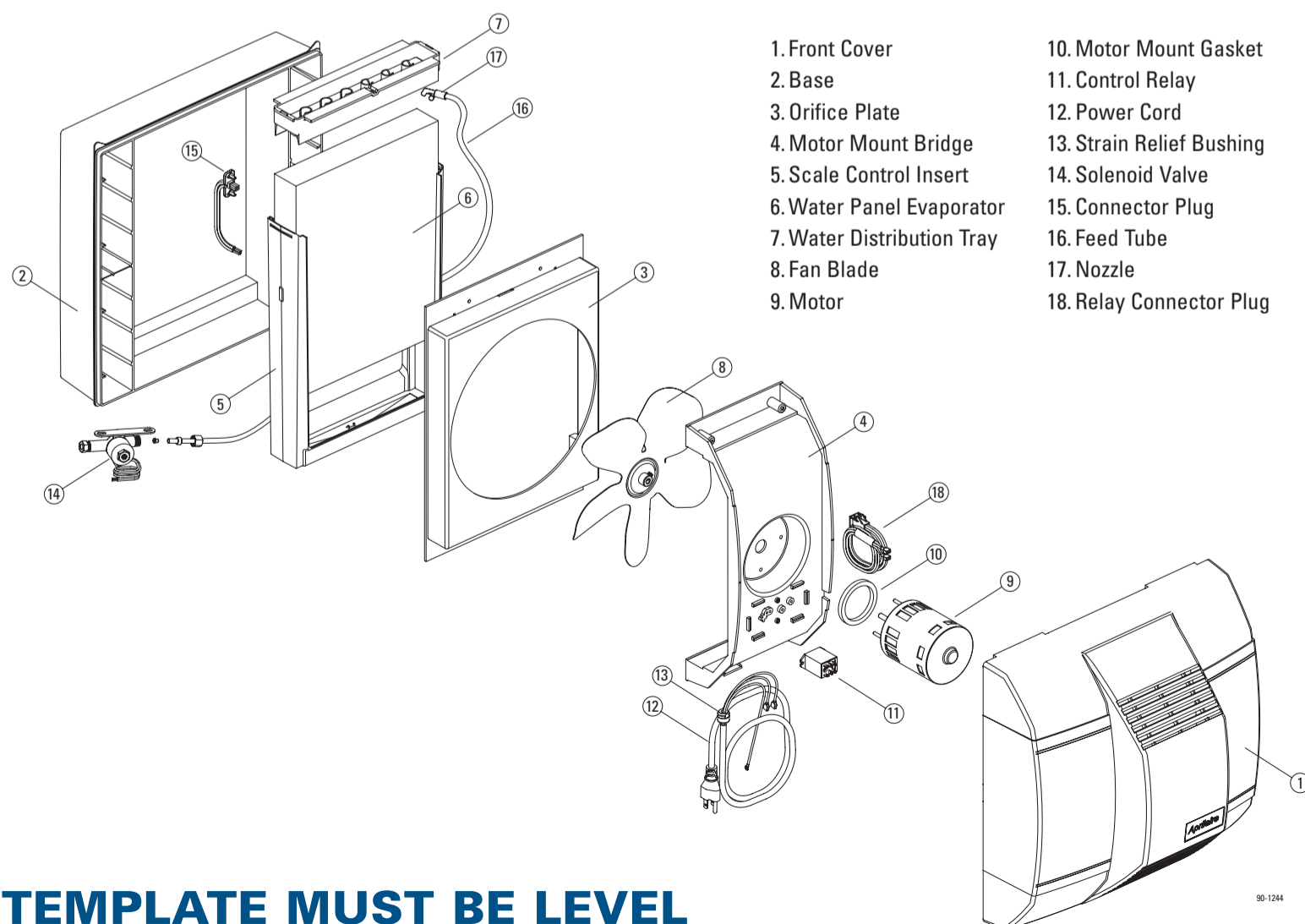
**7.** Humidifier will function with cold, hot, softened or unsoftened water. Hot water (140°F max) will provide maximum evaporative capacity. Saddle valve provided may be used to tap into water supply. See installation instructions on saddle valve package. Saddle valve is designed to be fully opened or closed. Do not use to regulate flow.

**8.** Run 1/4" copper tubing from saddle valve to solenoid valve. **DOUBLE-WRENCH TO PREVENT LEAKING.** See **Figure 4**.

**9.** Run 1/2" I.D. hose from drain spud to floor drain. Make sure drain has constant downward slope and is not kinked. Do not over-tighten hose clamp onto drain spud. Do not use solvent adhesive on drain spud.

**10.** Check humidifier operation. Open saddle valve and turn control to highest setting. Turn on furnace. Allow humidifier to run until water flows from drain. Make sure all electrical connections are secure and all plumbing connections are water-tight. Set control to proper setting.

**PARTS LIST**



- |                            |                           |
|----------------------------|---------------------------|
| 1. Front Cover             | 10. Motor Mount Gasket    |
| 2. Base                    | 11. Control Relay         |
| 3. Orifice Plate           | 12. Power Cord            |
| 4. Motor Mount Bridge      | 13. Strain Relief Bushing |
| 5. Scale Control Insert    | 14. Solenoid Valve        |
| 6. Water Panel Evaporator  | 15. Connector Plug        |
| 7. Water Distribution Tray | 16. Feed Tube             |
| 8. Fan Blade               | 17. Nozzle                |
| 9. Motor                   | 18. Relay Connector Plug  |

**TEMPLATE MUST BE LEVEL**

**NOTE: BEFORE LEAVING THE JOB SITE, MAKE SURE:**

- 1. Saddle valve is fully open.**
- 2. All plumbing connections are watertight.**
- 3. Humidifier functions properly.**

**IMPORTANT!** Be sure owner's manual containing instructions for operation and warranty information is given to owner in order to avoid unnecessary calls. Warranty is void unless humidifier is installed by qualified heating and air conditioning contractor due to possible misapplication of product.